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EXAMINER

DALEY, CHRISTOPHER ANTHONY

| ART UNIT | PAPER NUMBER |
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2111

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,854

Applicant(s)

MAIN ET AL.

Examiner

Christopher A Daley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1-27 are examined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-11, 14, 19, and 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Shoobe et al (US6725310), hereafter "Shoobe".

4. As to claim 1, Shoobe discloses an I/O bridge device (316 of Figure 3) comprising:

A parallel input port (312)

A serial output port (AGP Enable, Figure 3), and a plurality of parallel output ports (318b, 318c, 314)

A controller (Q Switch, 318a) coupled to the parallel input port (PCI, 312) and configured to route signals from the parallel input port to either the serial output port (AGP Enable) or at least one of the parallel output ports (318b, 318c), or both; and

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Serialization logic (309) coupled to the controller (Q Switch) and serial output port (AGP Enable), taking the parallel input from the parallel input port (314) and outputting the I/O signal in a serial format (Col3. lines 59 – 65). (This bridge device (316) is capable of taking parallel inputs from system bus 312 and route them to parallel output ports such as USB (318b) or serialize the parallel inputs into a single carrier that can be routed to docking station, Col 2, lines 3 – 9).

5. As to claim 2, Shoobe discloses the presence of a plurality of legacy input/output ports presence as I/O devices are available on the PCMCIA cards, 314 (on bus 312 Figure 3, Col. 2, lines 10 - 18).

6. As to claim 3, Shoobe discloses a I/O Bridge device with a LPC interface (318c, Figure 3). The LPC interface is coupled to the controller Q Switch, is also coupled to the ICH bridge (310). Control signals between host and peripherals are communicated over LPC bus 318c. (Col. 5, lines 51 – 53).

7. As to claims 4, and 24, Shoobe discloses a docking system (302, Figure 3) for a portable computer (300), the docking station including a docking connector (303b) adapted to receive serial data transmissions. Shoobe also discloses serially linking two buses through a packetizer/depaketizer (318,

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Figure 3) coupled to the controller (Q Switch) and the serialization logic (in 316, Figure 3). (Col. 3, lines 59-65).

8. As to claims 5 and 6, ShooBe discloses the presence of I/O controllers such as a system management controller and a floppy driver controller that is coupleable to the controller. These I/O controllers are a part of the notebook subsystems (207A, Figure 2A) and are coupled to the logic interface unit (210A) where the controller resides. A high level view is shown, but it will be recognized that various devices and peripherals are present (Figure 2A, Col. 3, lines 18 – 29, Col. 3, lines 39 - 43).

9. As to claim 8, ShooBe discloses a portable computer (300, figure 3) including a plurality of I/O ports (318b, 318c, 314) and a low pin count (LPC) input/output (I/O) bridge device (316) coupled to an I/O bus (318c), and a docking connector (303a) coupled to the LPC I/O bridge device, where the LPC bridge device comprises:

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A LPC controller (Q Switch, 318a) coupled to the I/O bus (318c) and docking connector (303a) adapted to detect whether the portable computer (300) is coupled to a docking station (302) via a docking connector (Col. 5, lines 63- 67) and route transmissions from the I/O bus (312) to the I/O ports (318b, 318c), docking connector (303a), or both; (Col. 6, lines 48 – 53)

And Serialization logic (309) coupled to the LPC controller (Q Switch, 318a) adapted to serialize the data transmissions routed to the docking connector (303a).

10. As to claim 9 10, and 21 Shoobe discloses a computer that supports a full spectrum of notebook computers from the basic unit to high performance units. The listed I/O ports; USB, AC-97, serial ports, floppy disk controller, IEEE 1394, or memory expansion interface ports would be supported ports (Fig. 1A, Col. 3, lines 39 - 43).

11. As to claim 11, Shoobe discloses that the portable computer is a notebook of various performance and feature capabilities (Figure 1B, col. 3, lines 10-11).

12. As to claim 14, Shoobe discloses a portable computer with an I/O Bridge device in a docking station (as shared above in claim 8). Shoobe discloses a LPC I/O bridge device that comprises a packetizer/depakatizer, coupled to the serialization logic and LPC controller (as shared above in claim 1). In addition,

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Shoobe discloses a system management bus controller, floppy drive controller, configuration and control registers, a watchdog timer, a fan speed control and monitor, and an Advanced Configuration and Power Interface (ACPI) coupled to the LPC controller as shared above (claim 6).

13. As to claims 19, and 25, Shoobe discloses a method, and apparatus of a portable computer (300, Figure 3) including a plurality of I/O ports (314) and a LPC I/O bridge device (316) coupled to the I/O bus (312) and the docking connector (303a);

And a docking station (302) coupleable to the docking connector, wherein the portable LPC I/O bridge device comprises:

An LPC controller (316) coupled to the I/O bus (312) and the docking connector (303a) adapted to detect whether the portable computer is coupled to a docking station via the docking connector (Col.5, lines 63-67) and route data transmissions from the I/O bus to the I/O ports (AGP Enable Signal), docking connector (303a), or both;

And serialization logic (318) coupled to the LPC controller (316) adapted to serialize the data transmissions routed to the docking connector;(AGP Controller Enable to transfer data between the video to the high speed serial interface of LPC control. Further, Q switch routes data transmission to the docking station via (303b)) wherein the docking station (302) is adapted to

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receive the serialized data transmissions from the LPC I/O bridge device through the portable computer docking connector (Col. 3, lines 59- 65).

14. As to claim 22, Shoobe discloses of a docking station with a USB hub that can support the memory expansion interface ports to interface with flash, multi-media card (MMC), smart media, smart card, or memory stick memory devices (334, Figure 3).

15. As to claim 26, Shoobe discloses a method wherein the portable computer LPC I/O bridge device includes an LPC controller adapted to detect docking and route data transmissions (The logic interface detects the docking of the portable computer and routes the serial interface into the circuit, Col.5 lines, 63 – Col. 6, line 3).

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12,13,18,20, and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Shoobe in view of Connors (US6338680).

16. As to claims 7, 16 and 23 Shoobe discloses the claimed invention of LPC controller, packetizer/depacketizer and serialization logic (see claim 4 above). This teaching does not disclose placing the LPC I/O Bridge in a single integrated circuit. "Official Notice" is taken that placing the LPC controller and the serialization logic on a single integrated circuit is old and well known in the art of IC integration. It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the LPC controller and the serialization logic on a single chip for cost saving and also improving bus latency.

17. As to claim 12, Shoobe teaches a portable computer with a docking connector. Shoobe does not teach of a portable computer with a docking connector less than 200 pins. However Connors teaches of a portable computer where the docking connector is less than 200 pins (9 pins, Col. 6, lines 10 – 14).

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Shoobe teaches that any embodiment suitable of routing data to or from a computer is within the scope of the invention (Col. 4, lines 58 – 64). It would have been obvious to those of ordinary skill in the art at the time of the invention to combine the teachings of Connors and Shoobe because it would minimize the pin count, reduce power consumption, and provide noise reduction.

18. As to claims 13,18,20 and 27, Shoobe teaches of a docking system. Shoobe does not teach of a docking system with a docking connector having less than 10 pins. However, Connors teaches of a docking system that has a docking connector with less than 10 pins (9 pins, Col. 6, lines 10 - 14). (The computer 10 of Figure 2 routes data communication to the docking station through a serial port 22. The micro-controller (20) controls the serial port (22). Shoobe teaches that any embodiment suitable of routing data to or from a computer is within the scope of the invention (Col. 4, lines 58 – 64). It would have been obvious to those of ordinary skill in the art at the time of the invention to combine the teachings of Connors and Shoobe because it would minimize the pin count, reduce power consumption, and provide noise reduction.

19. As to claim 15, Shoobe teaches of a docking station (302) for a portable computer (300), the docking station (302) includes a docking connector (303b) adapted to receive serial data transmissions, the docking connector having a LPC I/O bridge device (319), where the LPC I/O bridge device comprises:

An LPC controller (in 319) coupled to the docking connector (303b) adapted to route serial data transmissions; and serialization logic (High speed serial interface) coupled to the LPC controller (in 319) adapted to serialize data transmissions routed to the docking station. Shoobe does not teach a docking connector having less than 200 pins. . However, Connors teaches of a docking system that has a docking connector with less than 10 pins (9 pins, Col. 6, lines 10 - 14). (The computer 10 of Figure 2 routes data communication to the docking station through a serial port 22. The micro-controller (20) controls the serial port (22). Shoobe teaches that any embodiment suitable of routing data to or from a computer is within the scope of the invention (Col. 4, lines 58 – 64). It would have been obvious to those of ordinary skill in the art at the time of the invention to combine the teachings of Connors and Shoobe because it would minimize the pin count, reduce power consumption, and provide noise reduction.

20. As to claim 17, Shoobe teaches that the docking station can be a port replicator or expansion chassis (Col. 2, lines 36- 39).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A Daley whose telephone number is 703 605 4214. The examiner can normally be reached on 9 a.m. – 4 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703 305 4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CAD

June 28, 2004



TIMVO
PRIMARY EXAMINER